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PATENT APPLICATION

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q56091

Norihisa FUKUTOMI, et al.

Appln. No.: 09/413,348

Group Art Unit: 3752

Confirmation No.: 1912

Examiner: CHRISTOPHER S. KIM

Filed: October 6, 1999

For: FUEL INJECTION VALVE

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.41, Appellant respectfully submits this Reply Brief in response to the Examiner's Answer dated July 27, 2004. Entry of this Reply Brief is respectfully requested.

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TECHNOLOGY CENTER R3700

STATUS OF CLAIMS

Claims 2-9 are all the claims pending in the application.

1. (canceled).
2. (rejected).
3. (withdrawn).
4. (withdrawn).
5. (withdrawn).
6. (rejected).
7. (rejected).
8. (rejected).
9. (rejected).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

This appeal presents the following issues:

1. Whether the subject matter of claims 2 and 6-9 is anticipated under § 102(e) over

Reiter.

2. Whether the subject matter of claims 6-9 is anticipated under 35 U.S.C. § 102(b) over

Asano.

ARGUMENT

In the Examiner's Answer, on the first full paragraph on page 5, the Examiner alleges that the O-ring of Reiter inherently functions as a "buffer portion". The Examiner further alleges that the fact that the sealing ring of Reiter performs a sealing function does not preclude it from inherently functioning as a "buffer portion". In response, Appellants maintain that even if, *assuming arguendo*, the sealing ring 35 of Reiter is made of rubber, there is no such disclosure, explicit or implicit, that the sealing ring 35 dampens a change of fuel pressure caused by the valve when the needle is closed, as set forth in the claimed invention. The Examiner has failed to demonstrate that this limitation is an inherent aspect or feature of the sealing ring of Reiter, and neither Reiter nor Asano teaches or suggests that the sealing rings shown in Reiter, for example, would dampen a change of fuel pressure caused by valve bounce when the needle is closed.

In light of the foregoing, Appellant maintains that the Examiner is simply utilizing impermissible hindsight reasoning in concluding that the sealing rings of Asano and Reiter perform the functions set forth in each of claims 2 and 6-9.

Further, with respect to Reiter, the Examiner alleges that "the fact that the O-ring of Reiter performs a sealing function does not preclude it from inherently functioning as a 'buffer portion'". In response, Appellants submit that the specific structure of the invention of Reiter precludes the O-ring from functioning as a buffer portion. Further, Appellants submit that as described in the prior art section of the present invention, an O-ring employed as a sealing member does not have a damping function, just like the O-ring (35) in Reiter. Further, the O-

ring in Reiter is placed so that merely its side surface contacts with the side of the fuel passage and also is depressed toward the annular protrusion (33) by the fuel pressure and, as will be described later, is depressed to the bobbin (3) by the support member (36). Thus, by this reasoning, Reiter's configuration, already under compression, can not damp the fuel pressure change at the time when the valve needle is closed.

In response to the Examiner's allegation that the elasticity of the O-ring of Asano inherently functions as a buffer portion, Appellants submit that the Examiner incorrectly refers to component 22 of Asano as the claimed sleeve, however component 22 of Asano is clearly a casing. Further, Asano's O-ring (39) is under the condition of being compressed. Therefore, it only has a sealing function but does not have a damping function. Therefore, Appellants submit that the only function that the O-rings of the applied references perform is to seal, as explicitly stated in each of the applied references. Therefore, at least based on the foregoing, Appellant maintains the previously submitted arguments.

Moreover, Reiter, at col. 3, lines 47-48, indicates that the sealing rings 35 are depressed by supporting ring 36, and, thus, any ability of the sealing rings 35 to absorb any fuel pressure caused by valve bounce would no longer exist as the O-rings 35 would already be compressed, and thus sealing rings 35 can not be considered to exist as members for damping the fuel pressure change.

Further, according to Reiter, the O-ring (35) is placed in each of the internal and external chambers in order to keep the magnetic coil (col. 3, line 43). One of the O-rings (35) is placed in the inner annular chamber (34) defined between the lower end of the bobbin (3) for receiving

the magnet coil (3), the inner downward projection (33) of the bobbin (3) and the support member (36) placed directly under the O-ring (35); and another one is placed in the outer annular chamber (34) defined between the lower end of the bobbin (3), the outer annular downward projection (33) and the support member (36) whose leg of T-shape cross-section is inserted between the inner and outer downward projections (33). Thus the O-rings in Reiter are arranged under a compressed condition between the end portion of the bobbin (3) and the support member (36). As a result, it is impossible for the O-ring (35) to have a damping effect to act responding to the pressure change caused at the time when the needle valve is closed.

The element bearing the reference number (33) as pointed to by the Examiner represents projections projecting downwardly from the bottom end of the bobbins which are arranged in order to secure the O-rings sandwiched between the end portion of the bobbin (3) and the support member (36) depressed therebetween, and the leg for the “T” is fitted between the inner and outer annular projections (33). Accordingly an ordinary skilled person would consider the element bearing the reference number (34) to refer to the “annular chambers” and thus Appellants submit that referring of the number (34) as a physical component must be in error.

In this respect, Applicants submit that an ordinary skilled person would not understand the entities (33,34) as reading on the claimed “sleeve”. Therefore, it is respectfully submitted that the Examiner’s allegation of “Nothing in Appellant’s claims prevents reading ‘sleeve’ on Reiter’s elements (33,34)” can not be considered to be supported by sound reasoning.

Finally, with respect to the first full paragraph on page 7 of the Office Action, the phrase “wherein substantially all of said buffer portions contacts fuel in said fuel passage” was

mistakenly discussed in the Appeal Brief. This limitation is not necessary in the claims to render the claims definite under 35 U.S.C. § 112, second paragraph.

CONCLUSION

For the above reasons as well as the reasons set forth in Appeal Brief, Appellant respectfully requests that the Board reverse the Examiner's rejections of all claims on Appeal. An early and favorable decision on the merits of this Appeal is respectfully requested.

Respectfully submitted,



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